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ABSTRACT

Twenty-five Spanish-speaking English as a Second Language (ESL) students in a California high school were the subjects of a study to determine the effectiveness of an audiovisual as opposed to an audiolingual method. After pretesting, to ensure that the subjects had approximately the same proficiency level, the students were divided into a control group, which was taught to distinguish among the nuances of English "in," "on," and "at" using a traditional audiolingual repetition method, and an experimental group, which was shown line drawings as an aid in achieving mastery of the same distinctions. The experimental group performed better than the control group on the post test, to a .067 level of significance. The literature is extensively surveyed, and the pretest and post test are appended, along with a bibliography. (JB)

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BILINGUAL CONCEPT AWARENESS: THE EFFECTS OF METHODOLOGY ON SECOND LANGUAGE ACQUISITION

by

Don Phillip Johnson

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ABSTRACT PAGE

This study investigates the effects of methodology on the learning outcome of hich school students studying English as a Second Language. The general area of inquiry and research deals with the relationship of the processes of visual perception, cultural-linguistic classification and concept formation to the generation of non-correlating lexical and syntactic items in two contrasted language systems.

It was hypothesized that second language instructional methodologies that are founded on the premise of stimulus-response habit formation advocated by the behavioristic school of psychology do not provide an adequate cognitive foundation to permit students of a second language to make correct choices of non-correlating bilingual items that are based on a differing conceptual system in the target culture.

The purpose of the study was to discover, develop and compare the effects of an alternate methodology based on certain aspects of the cognitive-code learning theory. These included the theories and practices of visual feature analysis, contrastive analysis of linguistic elements, linguistic relativity, schemata formation, generative-transformational grammar and discovery learning strategy.

The alternate method that was ultimately developed for this study radiates around the use of visual display cards presented in an inquiry learning approach.

The experimental study compared the especially developed audiovisual method with the currently accepted audiolingual method of instruction. It is shown by empirical data derived from a controlled experiment in which the sole variable was methodology that the method based on the cognitive-code learning theory was of significantly greater instructional value than the audiolingual method for teaching the non-correlating, bilingual-conceptual items.

The recommendation of the researcher is that a complete set of visual display cards be developed illustrating all the bilingual-conceptual differences between specific contrasted languages and that such materials be tested in a broader and more comprehensive study.

It is also recommended that further experiments be conducted in order to contrast these methodologies to ascertain if they have significant effects on other areas related to educational growth in the second language field such as maturation levels, long-term versus short-term retention and learning styles of students from differing socio-economic backgrounds.

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Chapter 1

INTRODUCTION

The Problem and Its Setting

Many foreign language and English as a Second Language (ESL) textbooks presently in use are based on a theory of behavioristic psychology which maintains that learning is a matter of habit formation developed through a stimulus-response process. In second language (SL) teaching, this theory has been transformed into dialogue memorization, pattern drill exercises, substitution and other types of saturation drills designed to lead the student to make automatic oral responses in the target language when given certain audio stimuli (12:101).* However, according to some authorities (4, 38, 53), this method has not resulted in more efficient nor increased learning than that resulting from previous methods, but has actually disenchanted many students with the study of a second language because of its stress on the use of mechanical, pattern formation and oral drills (53:56). It has been suggested that this dissatisfaction may be the cause of the growing lack of interest and enthusiasm in SL study, the continuous attacks on the desirability of SL

*Numbers in parentheses refer to numbered references in the bibliography; those after the colon are page numbers.

study from various elements of the community, and the lowering or dropping of SL requirements at all levels of the educational system (4:1). Perhaps the solution for this growing dissatisfaction lies in the development of a new methodology founded on different philosophical principles and incorporating innovative teaching techniques.

Chomsky has theorized that language learning is more than the formation of habit patterns; "It is a consciously acquired, finite set of contrasts determined by intrinsic properties of mental organization" (14:425).

If the above theory were to be applied to SL teaching, the students would have to be made consciously aware of the set of phonetic, lexical, syntactic and conceptual contrasts that exist within the target language. The teacher would have to be prepared to aid the students to reorganize their perception and classification of objective reality in accord with the world view and the frame of reference of native speakers of the SL. This reorganization would require the students to actively participate not only orally but perceptually and cognitively in the learning process.

In discussing the problems of teaching Spanish to English speaking students, Bull has noted,

> . . . it is apparent that speakers of English who wish to learn Spanish have to be taught two things: first, the purely mechanical and arbitrary features of the Spanish language system, and, secondly, how the Spaniard sees or organizes reality and how this manner of perception provides the cues which determine the appropriate choice of contrasting form and syntactic patterns (9:17).

In other words, the behavioristic theory of language teaching and the cognitive learning theory approach are not mutually exclusive; they could be combined into an eclectic method to teach respectively those aspects of the target language that are similar or dissimilar from the primary language system of the learner. If a given item, be it phonological, lexical, syntactic or conceptual, is the same in the SL and in the primary language, it could be effectively presented and taught in a behavioristic manner. For example, door in English and puerta in Spanish have a one-to-one relationship when contrasted. The referents, the semantic range of the words, and the concepts are basically the same in both systems. The student should have no problem understanding and using this item because it fits into his scheme of things. The only difference is the purely arbitrary oral symbol that stands for the referent. On the other hand, when any two contrasted language systems focus their attention on different perceptual attributes of an object, classify it in differing ways, and hence perceive reality in different manners, audiolingual, habit-formation drills cannot be relied upon to clarify the apparent ambiguity that the learner will perceive in the SL (42:84). For example, corner in English has two Spanish equivalents: esquina and rincón. The English speaker views and classifies all corners from one set of criteria; e.g., "the point or place where two lines form or join, and the angle so formed" (24:301). The Spanish speaker, however, views

corners from a contrasting dichotomy based on the viewpoint of the angles; e.g., rincón is defined as "the inside angle of two surfaces" (49:905) while esquina is described as "the exterior angle formed by two surfaces" (49:434). As can be seen, in Spanish, an additional attribute or visual feature must be considered before making a lexical choice. The choice resides in the dichotomy of the concept of location into the contrasting set of inside/outside. This is a conceptual contrast that exists in English also and surfaces in such lexical items as ceiling/roof, floor/ground and others, but in this particular instance of corner it is disregarded. When learning Spanish, however, the observer-speaker must make a visual discrimination, a classification based on visual features, a conceptual judgment and a lexical choice in order to generate the correct item. That is to say, from the visual features the observer derives certain cues which he classifies according to his conceptual framework; based on his conceptual judgment he assigns an oral symbol to the item; he then produces the phonological series recognized as the accepted oral symbol for the selected item.

If the method of instruction is composed solely of dialogue memorization, drill repetition and oral habit-formation exercises, the students may never become aware of the fundamental, underlying concepts that are involved. They will, therefore, continue to make errors in their use of those items which have an unequal relationship in the

two contrasted conceptual systems. This can lead to frustration and finally to rejection of the total second language learning situation.

Statement of the Problem

The audiolingual method currently in use in many ESL and foreign language classes which is founded on theories derived from a behavioristic psychology is not totally adequate to teach students those elements of the target language that are based on a different way of editing, interpreting and organizing perceptual data. These elements include lexical item and syntactic patterns which do not have a one-to-one correspondence in the two contrasted linguistic systems.

Purpose of the Study

The purpose of this study is to develop and describe an alternate possibility for presenting non-correlating language elements to students in SL classes in order to facilitate the internalization of such elements. The effectiveness of the alternate method will be investigated in an experimental study to ascertain if its use results in any significant difference in learning performance.

Hypotheses

1. It can be postulated that the referents for oral symbols, the common focus needed to explain structural patterns and transformations, and even an idea of the basic semantic images underlying contrasting linguistic items can

be supplied in the form of drawings that depict objects, events and situations.

2. If the teacher were to devise and create a set of drawings that would isolate and illustrate the contrasting linguistic elements of the primary and target languages, these drawings could be used within a prescribed teaching methodology to provide examples of the relevant visual features that students must learn to recognize if they are to learn to correctly classify contrasting items within the conceptual framework of the second language.

3. If the presentation of relevant visual data were followed by an inquiry based teaching strategy, this procedure would hopefully lead to the deduction of the significant cues which the native SL speaker intuitively recognizes in the objective world. The students might then come to discover the existence of the visual features that govern the choice of particular contrasting lexical and syntactic items in the target language.

4. If this method were developed and utilized by teachers of ESL and foreign languages, it could alleviate some of the difficulties and frustrations that students suffer when learning certain elements of SL's in the restricted classroom environment.

Goals

It is hoped that those who develop ESL and SL materials for national distribution will take note of recent research findings in the areas of psychology, linguistics

and education and will incorporate some of these findings into their products in the future.

Teachers of ESL and SL's at all levels of the educational system who review this present study will hopefully become interested in developing similar methods and materials of their own creation.

It is also hoped that students who are exposed to the methodology suggested in this study will develop a greater awareness of the roles played by observation, analysis, categorization and cognition as they are related to language acquisition and usage. This awareness could cause them to develop a greater motivation for learning another language, create a more positive attitude toward learning the material, and prolong their study of the second language.

Background and Importance of the Study

Bruner has stated that Pavlov's experiments in stimulus-response behavior do not apply to the higher forms of learning (7:190). He comments that Skinner and others are still treating language learning following Pavlovian theory in spite of the fact that recent trends in behaviorism have advanced beyond the notion that conditioned response is responsible for the higher order neural processes.

Bruner goes on to suggest that the method employed in teaching students to think, not just to react, is most effective if it is based on discovery learning. He states that ". . . whether one speaks to mathematicians or physicists

or historians, one encounters repeatedly an expression of faith in the powerful effects that come from permitting the student to put things together for himself, to be his own discoverer" (7:191).

Carrol advocates the study of recent research results for preparers of SL material and observes that theorists and researchers have a problem communicating their ideas to the classroom teachers (12:104). It is suggested that those who prepare materials should act as interpreters of theoretical hypotheses and experimental findings by building new discoveries into their products. This same authority goes on to state that the following ideas should be taken into account when preparing SL teaching instruments: contrasted items are retained longer than non-contrasted items, feature analysis facilitates learning, visually presented materials are more readily learned than materials presented orally, and the more numerous the associations that a student makes with new material the better he will learn that material (12:104). To quote directly from this source,

> The audiolingual habit theory which is so prevalent in American foreign language teaching was, perhaps, fifteen years ago, in step with the state of psychological thinking of that time, but it is no longer abreast of recent developments. It is ripe for revision, particularly in the direction of joining with it some of the major elements of the cognitive-code learning theory (12:105).

This study will attempt to investigate the validity of the assertions given above by these two authorities.

Their suggestions will be implemented in an experimental technique utilizing a combination of visual aids, cognitive-code learning theory, discovery learning, contrastive sets and feature analysis. This study should provide empirical data that will either support or weaken the positions taken above by Bruner and Carroll.

Basic Assumptions

It is assumed for the purpose of this study that all members of a specific language group will have similar problems in learning the conceptual system of a given SL despite differences in age, intelligence, personal background, interests or cognitive abilities.

It is further assumed that instructors will have sufficient knowledge needed to describe the conceptual differences between the primary language of their students and the target language.

Definition of Terms

The terms used in this study are intended to be used and understood according to the following definitions only:

1.	attribute	a quality, characteristic or feature of an entity
2.	concept	the underlying, abstract generalities formed by recognizing and combining the similar elements of a class into a system

3.	deep structure	the subconscious knowledge of the features, schemata, relationships and concepts which constitute our subjective reality
4.	discrimination	the ability to analyze contrasting data and make a selective judgment based on past experience
5.	elements of a language	lexical, syntactic or morphological items isolated for the purpose of study or comparison
6.	lexicon	the vocabulary and the meaningful morphemes of a language
7.	perception	the act or process of receiving data through the senses (sight, touch, smell, taste, hearing) and of unconsciously editing that data so that only selected bits of information are processed by the brain
8.	phonetic	referring to the phones or sounds of the language
9.	primary language	the first language learned by an individual; also called the native language or the mother tongue
10.	reality features	cues that are perceived as residing in the object being observed
11.	relevant features	those reality features that are considered important by speakers of a given cultural-linguistic group that are used to discriminate it from another contrasted item; also called cues
12.	referent	the objective entity that a word represents
13.	semantics	the study of the meanings of words

14.	semantic range	the possible extensions of the meanings and uses of a given word
15.	syntax	the rules of a language that govern the inflection of words and their structural order in an utterance
16.	target language	the language being studied by an individual or group; also called second language
17.	visual features	those attributes of an entity that are perceived through the sense of seeing as opposed to features that would be perceived through the other four senses

Limitations

This study is limited to the effects of two differing methodologies on the learning achievement of students studying a second language. It deals specifically with visual and conceptual elements in two contrasted language systems. Other sensory features will not be investigated in this study although their existence and their importance is recognized as being an integral part of one's total perceptive ability, classification system and conceptual framework.

The various uses of visual media to teach vocabulary and sentence patterns is outside the scope and purpose of this study.

This study does not deal with recent developments, theories or experiments pertaining to differences in learning styles, affective behavior, socio-economic status, maturation levels or motivation for learning.

The aim of this study is not to attempt a taxonomy of the linguistic or conceptual framework of the English language nor of any other language as compared to English.

Chapter 2

REVIEW OF RELATED LITERATURE

Teachers of second languages have been attempting for centuries to discover the most efficient method of instructing others to understand, speak, read and write a language other than the mother tongue. In this century, research in the fields of psychology and linguistics has been particularly intense and has produced various theories concerning language acquisition; several of these theories have been converted into practical methods for teaching second languages and have enjoyed varying degrees of success or popularity. Nevertheless, recent developments in psycholinguistics and education suggest other possibilities which have not yet been fully investigated.

This chapter will briefly review SL teaching methods of the past and present, recent research findings in some related areas of study, and the use of visual media in the SL situation.

METHODOLOGY

A Survey of Methods

Several methods of teaching SL's have evolved as a result of man's progressive understanding of what

language is, what it is composed of, how its components are related and how the human mind utilizes and stores language data.

The traditional or classical approach to teaching a second language is known as the Grammar-Translation Method. This method concerns itself with the grammatical comparison of the primary and the target languages and stresses the memorization of rules based on grammatical categories used in traditional grammar. The student is trained to analyze sentences in one language and then to translate them employing the equivalent components and structures of the other language. The emphasis is usually on reading and writing skills; the ability to communicate orally in the target language is of less concern or of absolutely no concern since classical, dead languages were usually being studied for the purpose of reading ancient literature in its original form (39:10).

Early in the twentieth century when interest increased in the teaching of modern European languages, the traditional method was found to be deficient. A new method was needed that would teach the students to freely converse with living native-speakers of the language being studied. Out of this need for oral facility was developed the Direct Method. The main goals of this method are to provide the students with a native or near-native oral model and extensive practice in listening and speaking in the target language. Therefore, its proponents attempt to bypass the

use of the students' primary language. The students are immersed in the SL from the first day of class and are intensively bombarded with the foreign sounds, vocabulary and sentence patterns. Little or no grammatical explanation is offered, and the meaning of what is being practiced is left for the student to deduce. The use of realia, pictures, mime and gesture are resorted to as the teachers attempt to convey meaning without using translation. It is argued that this is the natural manner in which a child acquires the primary language and is, therefore, the best way for him to acquire a second language (39:12-14). The teacher serves as a mother-figure who attempts to guide the student to the meaning behind the sounds.

As a reaction to the apparent impreciseness of the Direct Method in regard to teaching grammatical structure, and as a result of research discoveries in behavioristic psychology, a new method was proposed in the 1950's. This was called the Audiolingual or the Aural-Oral Method. This method consists of dialogue memorization, the repetition of basic sentence patterns and saturation drills which are designed to elicit automatic responses from the students as they are given certain aural stimuli. This method stresses the learning of skills in a "natural" sequence; e.g., listening, speaking, reading and then writing. It proposes that language is a set of habits which are established through a mechanical habit formation process (39:14-16).

Complaints against the Audiolingual Method have

been aimed especially at the use of the pattern drills. Some teachers feel that they are too time consuming, that they are not meaningful to the students since they have little transfer value to real-life situations, that they focus only on surface structure and do not explain deep structure transformations, that they are dull and monotonous, and that the students develop an unfavorable attitude toward the second language because of them and consequently have poor motivation to learn the subject matter (53:30).

Reaction against such a mechanistic methodology was bound to arise, and in the last decade it has made its appearance under the name of the Cognitive-code Learning Theory. This theory refutes the idea that behaviorism is the basis on which a language is learned; it espouses the necessity of cognitive participation by the student, and, above all, the comprehension of the abstract principles on which the target language is based (13:297). Chomsky's Generative-Transformational Grammar has been partially the source of inspiration for this return to a cognitive or rationalist based teaching philosophy (33:3-12). The actual theory is a combination of research findings in the areas of maturational development, language acquisition, perception, classification and cognition. These topics are covered briefly in this chapter.

Many SL teachers borrow certain features of each of the previously mentioned methods and combine them as necessity requires. This is known as the Eclectic Method

of teaching. The teacher varies the methods employed in order to fit the students' needs, the material being studied, the objectives for the day, or just to give the students a change of pace. Some of the best known proponents of eclecticism are Palmer, Rivers and Finnochario (53:15).

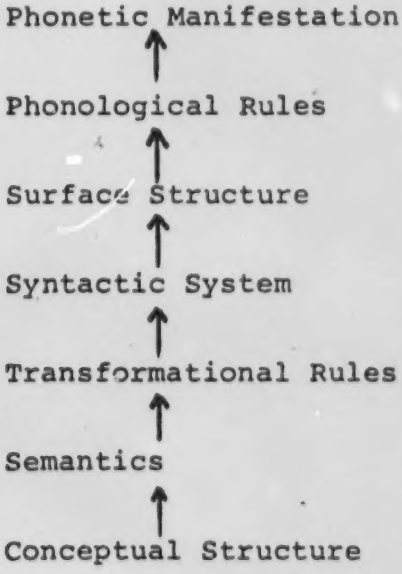
THEORETICAL CONSIDERATIONS

Generative-Transformational Grammar

Languages differ from one another in many ways and at various levels. At the phonetic level the difference is most apparent, for languages contain different sounds, and the significance given to contrasting sounds varies from one language to another. At the surface level (the conscious level before the thought is articulated orally), languages differ in several ways: the lexical forms referring to a given entity, the grammatical inflection of words and the syntax or word order may all be dissimilar in any two compared linguistic systems. At the intermediate level, the rules of transformation which cause the surface forms to change may not be identical, although Chomsky predicts certain universal similarities in all languages at this level (14:424). At a more subtle level, there will be notable differences in the semantic range for any given item in any two contrasted languages; this might be a reflection of an alteration of the conceptual structure at the very deepest level of consciousness at which language is generated (14:425-433). Since semantics are believed to

link the conceptual structure to the surface structure, this difference may be the cause of the most serious obstacles to learners of second languages. The problems arising from this type of conceptual disparity will be the most difficult for the learner to comprehend since they are of an abstract nature and deal with fundamental concepts that are known intuitively by the native speakers of the target language and are held at an unconscious level of awareness (31:40-41).

Langacker describes the levels of language in the following manner (39:89):



Langacker interprets the deepest level or the conceptual structure as the manner in which one's language breaks up conceptual space; e.g., the categories that are perceived as being inherent in nature according to a given language system (31:93). Common examples of these conceptual categories in Western European language systems would be

number, order, time, motion, quality, location, size, relation, being, composition, etc. However, many languages mark categories or apply combinations of categories, that seem exotic to speakers of another language, and the logic behind the categories at first seems incomprehensible to the student.

Navaho, for example, employs several different words to differentiate the ways of handling or manipulating objects. The lexical choices to translate drop, move, carry, pick up, etc., will vary depending upon the shape of the object to be manipulated. If the object is round, or long and slender, or flat, or a container, the verb will change to accommodate the idea of the shape of the object being handled (35:185-197). The concept involved is radically different from the conceptual categories employed by speakers of European languages. In Navaho, the conceptual criteria of form or shape is directly applied to the selection of lexical choices referring to manipulation or movement of an object.

Linguistic Relativity

Unknown or different concepts may exist in a second language, and these concepts reflect the manner in which members of that language group categorize and perceive reality (18:2). Whorf states this idea most adroitly in the following digested version of the theory on linguistic relativity:

> Every language is a vast pattern system, different from others, in which are culturally ordained the forms and categories by which the personality not only communicates, but also analyzes nature, notices or neglects types of relationships and phenomena, channels his reasoning, and builds the house of his consciousness (54:270).

These culturally ordained concepts exist in English, just as in any language, and through them native English speakers must filter the perceptions of objective reality. What is perceived, the percepts, are a distorted image, a culturally altered view of reality (43:332). The consequences of this theory are paramount for an English speaking student learning another language or for the speaker of another language learning English (15:1-35).

When a monolingual student attempts to learn another language, he must utilize the only conceptual structure that is available to him, and in his opinion the only one that exists, which is that of his primary language. Through this cultural grid, he attempts to pass the corpus of the SL and is baffled by its nonconformity to his system. He then attempts to reform the nonconforming elements of the SL into the image of his primary language system. He alters the pronunciation, the vocabulary, the syntax and the conceptual categories so that they more closely resemble what he has come to perceive as the normal order of viewing reality. This is known as interference from the primary language (29:226-240). Interference thus takes place at all levels of the SL learning process. However, interference at the conceptual level is the most difficult to identify

since it occurs at the deepest level of the thought process and takes place without conscious awareness of its occurrence.

Contrastive Analysis

Some researchers charge the teacher with the task of identifying differences between the native language and the target language, of developing materials to teach those differences, and of making the students aware of them (3:35-36). These experimentors have considered interference to be the main cause of student confusion and have prescribed that the following sequence of remediation be applied to solve this problem:

(1) identify the target element through a complete contrastive-analysis of the two languages,

(2) describe the differences,

(3) examine the frequency of the items as used in common conversation,

(4) describe the nature of the desired control of each item,

(5) describe the degree of desired control of each item,

(6) prepare materials to teach each item.

At this point, the researchers terminated their suggestions with the following statement,

> . . . it is suggested that the gap between linguistics and FL teaching can be bridged only if developers of FL material will avail themselves of contrastive data and use these data effectively in the preparation of teaching materials (3:40).

Contrastive-analyses of all the major world languages have been undertaken and completed by linguists;

these are commercially available, and their use can save the interested teacher much time and effort in preparing lessons for specific SL instruction (see Contrastive Studies, English Teaching Information Center and Contrastive Structure Series, University of Chicago Press).

Visual Perception and Feature Analysis

How is a given entity or event perceived and recognized by speakers of different languages? Ault describes one school of thought known as the Process Theory (2:83-135). Proponents of this theory hold that the observer learns to recognize certain distinctive features or attributes of an entity or event that provide cues for the classification of that entity or event within his cognitive framework.

Vernon theorizes that we build percepts from the effects of stimuli on our sense organs. That is to say, we adopt an organized procedure of retaining, coordinating and classifying the data received through our senses to give coherence to the reality that we perceive. The data is classified in terms of the appearance, behavior or function of the observed phenomena. Thus, as a person acquires a language, a tool of increasing value is formed in assisting in this categorization (52:180-192).

As Gibson states,

> . . . and reality provides messages to the sense organs. This information implies the existence of a set of cues and a process of interpretation. The mind acts upon the information and computes, confines and comprehends the data (25:45).

However, as previously noted, each cultural code or language system searches for different cues within the observed segment of external reality, classifies the cues within a different frame of reference, and bases the classifications on different guiding principles or fundamental concepts. Pearce interprets this process in the following manner,

> For perceptions are end products of our thinking, final results of our mind's acting on reality data. Our senses are exposed to and respond to a vast amount of reality data of which we are never consciously aware. An enormous amount of varied sensory activity goes on in the body at all times--and only selected items are processed as perceived events (37:126).

An example of this culturally imposed classification process may be borrowed from Hoppert's description of a dog as an animate, non-human, domesticated, four-legged, furry, tail-wagging entity that barks (27:54). This last feature separates dog from cat and other similar animals. Only dogs and seals bark, and seals lack the other distinctive features of dogs.

These are the markers, the cues, the relevant or distinctive features that are used in English-speaking cultures to classify one specific entity in their conceptual and linguistic system. Together they form a schema or a sort of idealized mental prototype that is retained in the memory. The schema is formed of all the distinctive features of a given entity plus all the possible uses of the word (its semantic range) and its compatability with

other schemata (10:7-12).

The distinctive feature theory of perception has been tested in various field experiments (5, 10, 52) which provide empirical evidence to suggest that one acquires the ability to discriminate by attending to sensory data, developing schemata and becoming aware of the use of the specific conceptual framework employed by one's cultural group to categorize the data.

Hoppert's experiments suggest that the younger the child, the more generalized is the meaning that he attaches to a word, and as the child grows older and learns the "markers," the adult meaning is acquired (27:54).

Another investigator describes feature analysis and schemata formation by stressing the belief that the observer discriminates the attributes of an entity or event in order to recognize its form (23). Schemata formation is described as the process by which we develop a model or standard as a frame of reference upon which we test the recognized form (23:200). These two theories are complementary and lead to the conclusion that we employ an information processing procedure; we perceive, analyze and decode selected bits of information, compare them with an established model, and then classify and label the entity according to information stored in our long-term memory.

In a different language, there may be additional features or less features to be considered in the schema and, therefore, a difference in the contrasted schemata of

the two compared language systems. In the South Sea Islands, for example, where historically there were neither cats nor dogs present in the culture, the feature barks is absent from the schema of dog and consequently the lexical item in their language can be used to refer to either a dog or a cat (32:284).

In another language, that spoken in Thailand, there are two terms for dog - mǎa and sunák. The difference does not lie in an external feature of the object, but in what might be called a covert, cultural feature--who owns the dog. If a commoner owns the dog, it is a mǎa; however, if the same dog were owned by a person of importance, it would be a sunák. In Thai, an additional feature is carried by the schemata--that of the social rank of the owner of the object being observed (32:262). This feature must be taken into consideration by speakers of Thai to make the correct selection between lexical pairs of words. The underlying concept on which this selection is based permeates the language--social distinction and deference to the upper social class. This is reflected through the language and would have to be consciously learned by students of Thai.

If schemata are shared by members of a group having a common culture and language, we can expect that they will be alike but will differ from those of other cultural groups. A member of a given cultural group acquires the schemata of his group unconsciously and is unaware of the concepts on which categorization is made. Features, percepts,

schemata and concepts will have assumed the appearance of being inherent in the very nature of reality and not being simply a semantic element which has been covertly agreed upon by members of a certain social-linguistic group (54: 270).

The monolingual speaker of any given language sees reality as actually existing within the constraints and limitations of his linguistic framework. This viewpoint is constantly reinforced by other speakers of the language and the social structure in which one lives. Any other language, based on other schemata and other fundamental concepts, is therefore "illogical" because it views reality in the "wrong way" (37:19-54).

Second language acquisition is, therefore, the acquisition of a second set of schemata and of a second framework of conceptual structure. According to one authority, it will entail "A change of concepts, observation habits, feature recognition and classification standards" (52:192). The teacher must learn to direct the students' awareness to the different features of the stimuli which provide the cues to the cognitive process. However, as Bull has observed,

> The notion that the learner of a language must be trained to isolate, recognize, and react to all the cues which signal the choice of contrasted items has received virtually no attention from either the classical grammarian nor the contemporary linguist (9:16).

Experiments have demonstrated that members of a given cultural group have a clear preference as to which

features of an object they attend to (28:1-37) and that eye movement differs according to the language of the observer (25). This phenomenom may be explained by attributing it to a search for differing visual cues within the observed entity or event in an attempt to classify its features and identify the schemata according to the culture of the observer. This implies the existence of a set of cues and a process of decoding for each language.

Vernon surmises that the individual learns to choose what he sees and has demonstrated by experimentation that learners can be trained to analyze the perceptual field with some finesse and to abstract certain aspects of the perception from the total impression (52:180-192). The learners performed satisfactorily if instructed where to direct their awareness and acquired facility through repeated practice. The distinctive features had to be presented in a clear and unambiguous manner and had to supply sufficient information to allow the observers to classify the schemata.

VISUAL MEDIA

Rationale for the Use of Visual Media

The recorded use of visuals in language teaching dates back to 1658 when the Hungarian teacher Comenius published the Orbis Pictus to teach Latin to his students (34:245). In spite of its ancient utilization in this field, researchers have commented on the failure of language promoters to take advantage of this technique in recent SL

methodology (41:144).

Visuals can provide many advantages in the SL instructional situation. They attract the learners' attention and provide a common focus for all members of the class. They present ideas in visual form which are more impressive than in the oral form. Pupil interest is greater when visuals are employed, the class discussion is more lively and absorbing, the subject matter is more clearly defined, and translation of new words is not required because the visual makes the referent clear. Also, the students have a better opportunity to point out visual features, make associations with past information and clear up past errors or confused concepts by making new judgments based on incoming visual data. Visuals are easy for the teacher to store and reuse, and they provide a psuedo-realia that the teacher can keep ready to use creatively in situations where difficulties in explaining certain concepts or schemata occur (34:250; 17:494; 36:65).

Types of Visual Media

Visual media can be produced in many different forms; among these are hand-drawn pictures, photographs, slides, overhead projection transparencies, movies and filmstrips (26:3). Teachers may wish to produce their own materials or to purchase ready-made materials from commercial distributors (see Audio-Visual Aids in Language Teaching, British Council, 1975).

When selecting visual materials for classroom use,

certain factors should be taken into consideration; these are: the age and grade level of the students, the SL training of the teacher, the objectives of the lesson, the type of text that is going to be supplemented, the facilities available and the organization of the visual material (36: 86).

Research on pictorial illustration has shown that children prefer color pictures to black and white and that they prefer realistic looking pictures to abstract illustrations (44:43). The pictures to be used will be more effective if they relate to the personal past experience of the group and if they are easy to interpret. It was found by one researcher that the most effective visual aid for teaching the parts of the human heart was plain linear drawings (19:250). Photographs, abstract drawings and shaded drawings confused the students with their excessive detail.

It has been theorized that information stored in the brain is isomorphic to line drawings and that visuals which most closely resemble line drawings will be more effective and more efficient in aiding learning than are more detailed drawings since the former are more easily coded and stored in their elementary form (50:1-17). In observing natural phenomena it has been hypothesized that the perceptual machinery reduces the amount of information so that only the essentials reach the brain (1:183). Lines bordering objects provide the essence of the information

to be conveyed; therefore, stick figures or line drawings may be the most effective type of drawing to employ in visual teaching tools.

If the type of textbook that is to be supplemented is based on the Audiolingual Method, the teacher should be aware of the difference between the terms "audiolingual" and "audiovisual." The techniques are not the same for each method. Audiolingual stresses linguistic context and provides the aural-oral habit formation necessary for automatic response whereas audiovisual lays stress on the visual perception, analyzation and decoding of visual stimuli based on the Cognitive-code Learning Theory. The most natural sequence of combining these two methods is to utilize AV material initially to introduce the subject under study, and then to continue with the audiolingual techniques to set the habits or responses (16:87-87; 45:101).

In considering the facilities and the environment in which the visuals are to be employed, one should take into account the disposition of any needed equipment to display the visuals, the availability of special rooms, the necessity for special conditions--such as darkening the room to show slides, the availability of storage facilities for the visual material, the time that will be lost in setting up equipment, and the possible malfunction of mechanical or electronic equipment needed as an adjunct to the visuals (36:65-68). Any one of these factors can cause difficulties for teachers attempting to employ visuals

and can create an obstacle to their regular use as an integral part of the lesson.

The visuals may be organized in several different ways. Mackey divides pictorial representations into only three types which he calls thematic, mnemomic and semantic (34:245). In other words, they may be organized as to topic, function and meaning. Examples of these categories would be the rooms of a house or all the new items in Unit Six (topic), the formation of the plural nouns or the use of the past tense (function), and certain relationships such as between-among, in, on, at (semantics). Teachers can build such organization into self-created materials or can reorganize commercially produced materials according to the objectives of their planned lesson.

Use of Visuals

Cole believes that the chief role of pictures in SL instruction is to establish meaning by association of sound with the visual representation of an entity or event in the "world of things" (16:85). Yet, even in this narrow function, that authority perceives several difficulties:

(1) there is a danger of ambiguity in interpreting a visual representation,

(2) meaning is not really conveyed, only sound-visual correspondence,

(3) abstract meanings cannot be illustrated,

(4) function words cannot be illustrated, and

(5) juxtaposition of linguistic structures which is basic to meaning is not illustratible (16:85).

In isolation, these limitations are perhaps valid; yet the actuality is that the visual is employed by a teacher who can organize the presentation of information to avoid ambiguity, aid in supplying meaning, attempt to reach the abstract through the presentation of the concrete, use the illustrated items in linguistic structures and include function words in juxtaposition to the illustrated items. Cole himself goes on to say,

> The teacher's task is to help the child to give explicit verbal formulations to describe what he perceives and to convey what he feels. A fuller comprehension of an object or situation in linguistic terms can only be acquired by putting more questions and demanding more adequate answers (16:86).

This implies that the teacher must discover a method or technique that will support and complement the use of the visuals and that will allow the student to acquire more linguistic information than that which is gained through casual observation of an illustrated item following the procedures of presentation and organization presently employed.

The question is therefore how to utilize visuals in a manner that will allow the instructor to teach second language feature-analysis, schemata and conceptual structure, and how to organize the material to facilitate this type of instruction. The employment of a discovery learning strategy may provide the answer to this question.

INSTRUCTIONAL STRATEGY

Discovery Learning

Bruner concerns himself with the problem of how teachers can develop a strategy that will allow students to obtain knowledge through the use of their own cognitive ability (7:190). It is theorized that teachers should allow the students to be discoverers of knowledge, even though it is not new knowledge, and that the goal of teachers should not be to develop rote-learners who rely on authorities for learning but to form "self-propelled thinkers" who understand and can apply the scientific method of inquiry to discover information by themselves. The process that Bruner espouses for reaching this goal is called Discovery Learning and is based on the philosophy that it is possible to teach students to make their own discoveries in any area of knowledge by devising personal strategies in a regulated search for information and classification. The teacher's role in this process is to present the students with raw data, to aid them in formulating strategies, and to provide questions that will stimulate their curiosity concerning the data.

The benefits of this method will be that the students will increase their intellectual potency, shift from a dependence on extrinsic rewards to intrinsic rewards, learn the hueristics of discovery, and enlarge their memory processing capabilities (7:192-200).

Suchman brings out the fact that

> . . . the children need some kind of focus for their attention, some kind of problem or stimulus, and preferably, although not necessarily, one that is discrepent to the schemata or conceptual system of the child. In other words, one that cannot be readily assimilated (47:231).

By providing the students with such a focus and a discrepent schema or concept, the teacher allows them the opportunity to inquire, question, define, gather data, observe, classify, generalize and verify in matters of language (40:37).

In the area of SL teaching, and especially in those linguistic elements of the SL that are based on non-correlating visual features, schemata and/or fundamental concepts, this method of inferential learning could be particularly effective. As Bruner states,

> The process of attaining a concept which has been invented by someone else is the process of determining the criteria by which they have placed certain attributes into certain categories (8:34).

Another proponent of the inquiry strategy for learning has suggested that what is needed is a technique that will help students to organize knowledge. The suggestion provided by Taba is not to present the abstract idea or concept which is to be studied, but, instead, to present stimuli and ask questions that will force the learner to observe, categorize and conceptualize (48:21-24).

In the next chapter it will be shown how a concept in a second language may be taught by employing visuals and an inquiry learning strategy. A sample of materials was

developed, and this sample was field tested on an experimental group. The experimental group received instruction using an Audiovisual Method based on the Cognitive-code Learning Theory. A control group received instruction covering the same linguistic problem using the Audiolingual Method. The objective of the experimental study was to ascertain if any significant differences in learning occur due to the use of the different methodologies.

Chapter 3

THE STUDY

Introduction

Chapter One described the problem that students experience when learning certain non-correlating items of a second language that are based on differences in the conceptual structures of the primary language and the target language. It was hypothesized that the difficulty in learning these items may be due to the instructional methodology employed, namely those methods based on operant behaviorism. It is the suggestion of this paper that an alternate method for the instruction of the non-correlating items might be created from the combination of the use of visual display cards utilizing line-drawings, visual feature analysis, and a discovery learning strategy based on the Cognitive-code Learning Theory.

In order to test this hypothesis, a control group and an experimental group have been given instruction on the use of a non-correlating conceptual item in order to ascertain if the differing methodologies employed would cause any significant differences in the exit levels of the groups. The Audiolingual Method was used with one group, and the Audiovisual Method was used with the second group.

This chapter describes the study undertaken and provides a description of the linguistic-analysis, the conceptual differences between the two contrasted linguistic systems, the selection of the subjects involved in the study, the experimental design that was utilized, the treatment given to both groups and the instrumentation employed to extract pertinent data.

The Linguistic Problem

Latin American Spanish commonly uses en to describe the spatial relationships which in English are described using the words in, on and at. The Spanish language system does include specific terms to describe these exact relationships but they are not commonly used in informal speech. English is more precise in specifying the exact relationship of one entity to another in this instance. In Spanish, the situational context usually explains the relationship. This study deals with the difficulties that Spanish speaking youngsters have in learning the use of those three items in English.

The Contrastive Analysis

In the English language, in is used to describe the relationship of one entity to another when the first entity is enclosed within the confines of the second entity. Examples are:

The pencil is in the drawer.

My sister is in the car.

In is also used to indicate that a person is involved in an activity. Examples are:

George is in the play. (He is acting)

Mary is in the dance. (She is dancing)

Tom is in the parade. (He is marching)

The above examples should be contrasted with the use of at which is used to show that a person is not involved in the activity. Examples are:

George is at the play. (He is just watching it)

Mary is at the dance. (She may be just watching)

Tom is at the parade. (He is just observing)

On is used to show a relationship in which one entity is touching the supporting surface of another entity. Examples:

The pen is on the table.

The child is on the sofa.

The repairman is on the pole.

At is used in two other situations describing location. It describes the relationship that exists when one entity is in close proximity to another. Examples:

Someone is at the door.

The truck is at the curb.

Our cabin is at the lake.

At is also used to show that an entity is in the general area of another entity but that the specific location is unknown or the speaker wishes not to be specific.

Examples:

Johnny is still at school. (He's somewhere in the general area of the site)

The workers are at the dam.

My parents are at the stadium.

Finally, in, on and at are used in restricted positions in combination with geographical entities. Examples:

She is in Europe.

I live in California. (large geographical areas)

The house in on Maple Avenue. (streets)

The traffic on Hacienda Boulevard is heavy.

I live on Temple Street.

I live at 568 Temple Avenue. (numbers)

My office is at 1134 Wegglin Avenue.

The speaker has no choice of which lexical item he will select in these situations but must employ the item used in conjunction with the specific type of geographical entity that follows.

In Spanish, en can be used to describe all of the above situations and all of those previously mentioned (46:207).

The Conceptual Relativity

The concept that underlies the simple use of the aforementioned lexical items in both languages is that of location which is a subcategory of the general concept of

space. The English language system demands that the speaker use greater precision in describing spatial relationships than does the informal Latin-American language system commonly employed by Spanish speaking individuals living in the United States. A more complex use of in and at previously described is that which is based on the concept of involvement/noninvolvement in an activity or social function.

A breakdown of the conceptual functions and the bilingual correspondence of these contrasted items takes the following configuration:

1. LOCATION

Spanish	English
en	in
	on
	at

2. INVOLVEMENT

Spanish	English
en	in
	at

3. GEOGRAPHICAL LOCATION

Spanish	English
en	in
	on
	at

The speaker must make many more visual discriminations, conceptual classifications and lexical choices in English than he does in Spanish. Consequently, the native speaker of Spanish finds the selection and usage of the English system confusing.

This problem is further complicated by the uses of

in, on and at in other concepts; e.g., to describe relationships of time (in May, on Sunday, at six o'clock), of size in modes of transportation (in a helicopter/on a jetliner, in a car/on a bus, in a rowboat/on an oceanliner); and with idiomatic expressions such as "Have a drink on me," "She's good at kissing," "In back of me," etc.

A contrastive analysis of each of these concepts and the lexical choices that can be generated by differing reality features in both languages should be undertaken and non-corresponding items should be identified. The above concepts should be included in a sequentialized program of concept awareness and would constitute subsequent lessons in a complete learning plan involving this item.

Selection of the Subjects

Several schools were visited in the San Gabriel Valley of Los Angeles County, California in an attempt to locate a group of ESL students who would participate in the experiment and who met the prerequisites established for the designed experiment. The necessary conditions were that the students have a homogeneous primary language (Spanish), that they have a minimum of one year of ESL instruction, that they customarily utilize an Audiolingual Method in their ESL classroom, and that they still show signs of confusion concerning the use of the conceptual elements and lexical items under consideration.

The site ultimately selected for the study was the La Puente High School in La Puente. The group selected was

the intermediate ESL class under the care of Mrs. Shirley England.

There were approximately twenty-five students in this class. The majority of the students employed Spanish as their primary language; the remaining students employed Chinese, Korean, Japanese, Vietnamese or Arabic as their primary language.

The text in use in this class was Let's Learn English by Audry Wright (55) which employs the Audiolingual Method of instruction. Book Two, Unit Fourteen, pages 179-192, deals with the uses of in, on and at in their various contexts although these are not explained conceptually.

The Experimental Design

The experimental design employed in this study followed that suggested by Campbell and Stanley (11:13-24) and is known as the Pretest-Posttest Control Group Design. This design was modified in its random selection procedure following Tuckman's description of the matched-pair technique (51:82-83).

The final design was composed of a total class pretest using the preliminary evaluation instrument (see Appendix); a random selection in which the Spanish speaking students were randomly placed into the control or the experimental group by matched pairs according to their scores on the pretest; the treatment of the control group (a) using the Audiolingual Method followed by a posttest

using the terminal evaluation instrument (see Appendix); and the treatment of the experimental group (B) using the Audiovisual Method followed by a posttest of that group. The representation of this design takes the following configuration:

The two groups formed after the pretest were exactly equivalent on their mean pretest scores. Ten questions are included on the pretest instrument, and the twelve selected subjects scored as noted below in Table 1.

TABLE 1

TOTAL PRETEST SCORES

Number of Correct Answers	Number of Subjects Scoring
1	0
2	0
3	2
4	0
5	4
6	4
7	2
8	0
9	0
10	0

Two groups were then formed by randomly selecting subjects with equivalent scores and assigning them to the control or the experimental groups. Each group was thus composed of six students.

Four contacts were made by the researcher with these groups. The total class was first observed and evaluated for desirability on Monday, April 17, 1978. Since the group met the majority of the prerequisites that had been deemed as necessary conditions for the experimental study, it was decided to proceed with treatment. Consequently, the researcher met with the class and administered the pre-test during their first period on Tuesday, April 18. From the scores acquired on that instrument, two groups were randomly formed by pair blocking. On the following day, one group was taken to a separate area of the classroom, which was afforded privacy through the existence of partitions, and given treatment A. The treatment lasted forty minutes and the posttest was then administered. Scoring of this instrument was not performed in the classroom. On the following day, the other group was taken into the same area and treatment B was administered. The treatment lasted forty minutes and the posttest was then administered. Time, place, duration of the treatment and the terminal evaluation instrument were all equal for both groups. Since the two groups were composed of students who were of matched knowledge in their entrance skills, the only variable was that of treatment. The researcher administered treatment to both groups.

Treatment of the Control Group

The basic format of the textbook in use by the class was followed. This consisted of sentence repetition in which the items *in*, *on* and *at* were employed. Choral repetition by the group was followed by individual repetition of the basic sentences in a dialogue (*Let's Learn English*, Book Two, p. 179). Substitution drills were put on the blackboard and performed orally by individual students. These drills contained examples of all the previously described uses of the lexical items under study. The rules for the use of these items were then presented orally by the teacher in an expository manner. No student input was requested at this point. It was hoped that students had deduced the rules for usage from the corpus of the oral drills. These deduced rules were then reinforced by the expository description offered by the instructor. The posttest was then administered to this group.

Treatment of the Experimental Group

The following sequence was employed to instruct the experimental group. The methodology was based on a combination of the theories and techniques espoused by proponents of Contrastive-Analysis, Linguistic Relativity, Visual Feature Analysis, Audiovisual Devices, Cognitive-code Learning Theory, Inductive Strategy and Discovery Learning.

(1) Presentation of raw data and of a problem to be solved. A series of line-drawings illustrating the concept of location as evinced by in, on, and at in the English language system were displayed to the group. The instructor described the illustrations in English. Typical sentences used to describe the simple locations were:

(Plate I)

The spoon is in the soup.

The lemon is on the glass.

(Plate II)

There are two books on the table.

There are some flowers in the vase.

(Plate III)

This girl is in her house.

Her friends are at the door.

There is a picture on the wall.

(Plate IV)

These people are at the checkout counter.

They have a lot of things in their cart.

Some things are already on the counter.

(2) The students were then asked to describe what they thought were the differences in the usage of the three words in, on and at. The visuals were displayed again, and the sentences were repeated by the instructor. The students discussed their impressions concerning the use

of the three items and the visual features illustrated.

The instructor did not offer an explanation but did provide questions such as, "What is the exact position of the people in relation to the door in this picture (Plate III) and these people (Plate IV) in relation to the counter?" Once the students had discovered the visual cues and had arrived at a satisfactory conclusion as to the use of the items and the concepts involved, the next step in the procedure was initiated.

(3) The instructor displayed the next picture (Plate V) and asked the students three questions to elicit the correct responses using in, on and at. The questions asked were: "Where is the door number?" (On the door), "Where is there a hole?" (In the door), and "Where is the boy?" (At the door). This verified that learning had taken place during the previous feature-analysis and discovery learning phase.

(4) The students were next asked to formulate original sentences using the three lexical items that would describe other locations that they noticed in the room. This was to free their attention from the visual cards and draw their attention to the existence of the visual features in their immediate environment. This procedure was designed to reinforce their newly acquired knowledge of a SL concept and to make it more personal through immediate application to a real-life situation.

The next phase of the instruction was to teach the

more complex situation in which in and at are used to describe the involvement or non-involvement of a person at an activity. Other illustrations (Plates VI-XI) were used to instruct the students in this concept. The sequence of instruction was similar to that previously described.

The final illustration (Plate XII) was subsequently employed to provide an example of the uses of in, on and at as related to a geographical location ("I live in La Puente, on Temple Avenue, at number 458"). The sequence of instruction was identical to that described above.

The Evaluation Instruments

The pretest and posttest (Appendix A) are basically the same; however, different sentences are employed in each evaluation. These instruments consist of ten multiple-choice problems in which the correct selection of in, on or at must be made to complete a sentence. The frequency of use of each of the three items on the instruments is as follows: in three times, on three times, and at four times. In is used to show simple location and involvement in an activity. On is used to show location. At is used to show location and non-involvement. All of the previously described concepts and applications are included in both instruments. Students were asked to individually read, select and circle the items of their choice for each sentence. If some portion of the sentence other than in, on, at was not understood by a student, the Spanish translation was given to the student orally by the researcher.

Description of the Display Cards

Visual illustrations were hand drawn using cartoon-type figures on 11" x 14" white, posterboard cards. These cards were designed to be hand-held by the teacher and are clearly visible from a distance of approximately twenty feet. Each card illustrates a situation that emphasizes a particular item or a combination of items that are under study. Used as a set, the cards can be made to illustrate an abstract concept such as that of location.

Photographs were taken of the illustrations developed especially for this experimental study; these are presented in the Plates as a sample of the type of visual aids that can be created for SL concept instruction.

Statistical Treatment

An analysis of mean scores as described by Tuckman was utilized to test the significance of the results obtained from the study (51:236). The data will be analyzed in the next chapter.

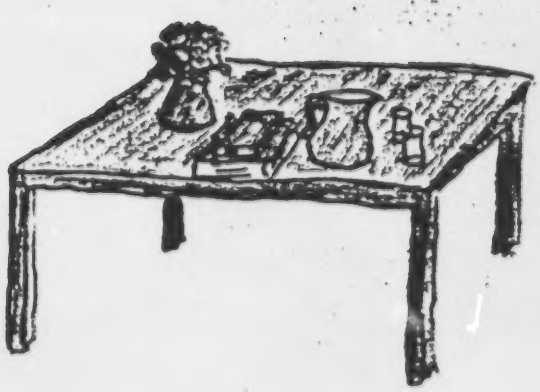
Summary of the Chapter

In Chapter Three, the problem and the hypothesis were restated and the study was described. This description included the linguistic and the conceptual items utilized as the instructional material for the study, selection of the subjects, diagnostic procedure, experimental design, treatments applied, and instrumentation employed to measure the results of the experiment.

PLATE I

In and On for Simple Location

PLATE II



In and On for Simple Location

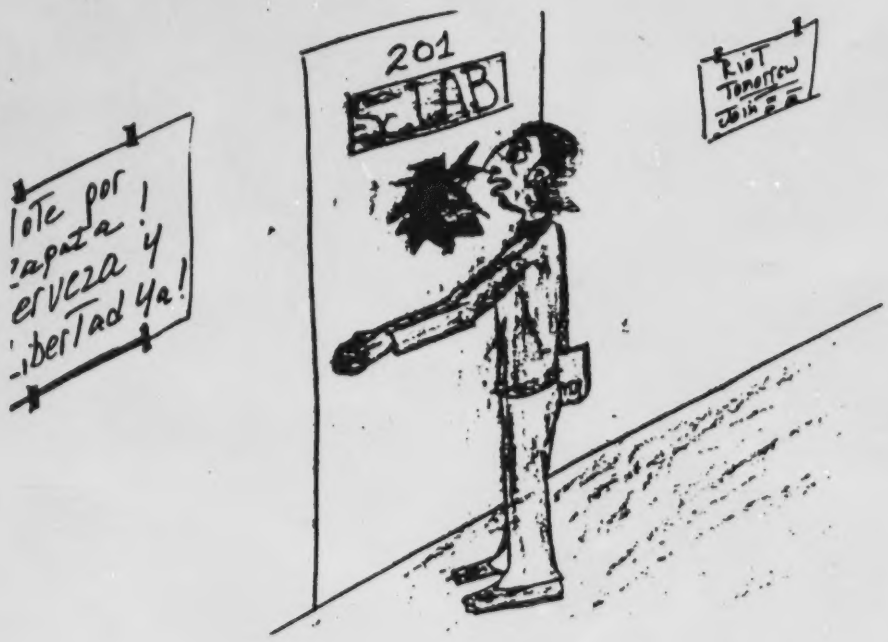
PLATE III

In, On and At for Location

PLATE IV

In, On and At for Location

PLATE V



In, On and At for Location

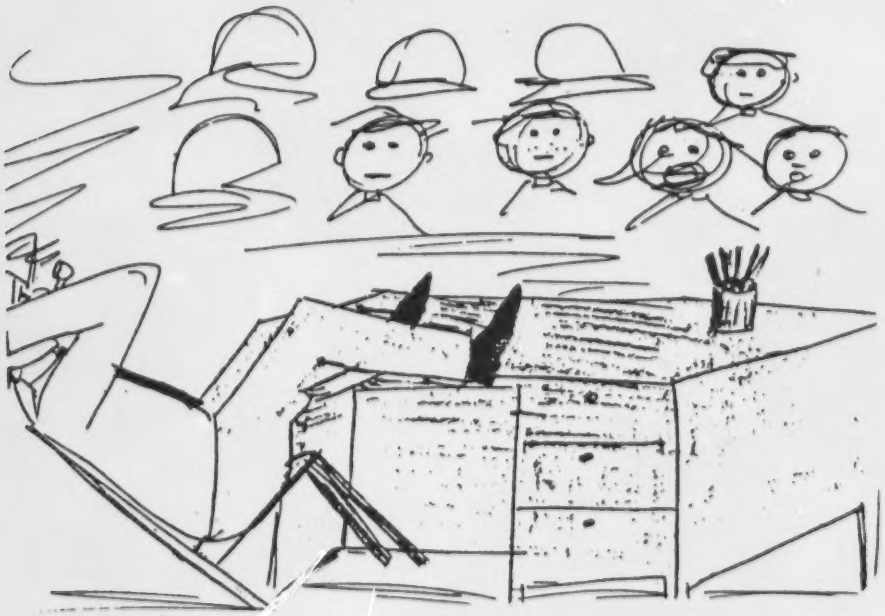
PLATE VI

In for Involvement

PLATE VII

At for Non-involvement

PLATE VIII



In for Involvement

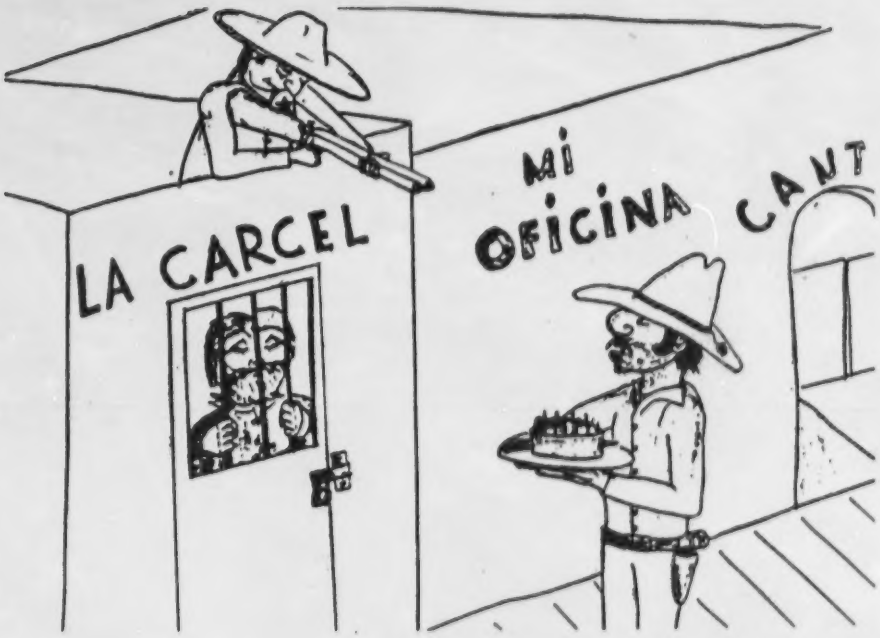
PLATE IX

At for Non-involvement

PLATE X

In and At for Involvement/Non-involvement

PLATE XI



In and At for Involvement/Non-involvement

PLATE XII

In, On and At for Geographical Location

Chapter 4

FINDINGS

Introduction

Chapter Three described the study which was designed to provide empirical data concerning the effects of a sole independent variable--methodology--on students' learning performance in concept awareness in a second language.

It was anticipated that the Audiovisual Method would be more effective than the Audiolingual Method in teaching this type of material since concept awareness and application were considered to involve cognitive ability and would not seem to be theoretically associated with stimulus-response behavior nor the habit formation process.

The level of statistical probability that the results of the study would be due to chance variations in the experiment was set at .05 which represents a difference of .50 points on the ten point evaluation instrument that was employed.

Findings

The mean score of the total class on the preliminary evaluation instrument was 5.33 (Table 1).

Following the Audiolingual treatment, the control

group achieved a mean score of 9.16 (Table 2) on the terminal evaluation instrument. The mean gain was 3.83 points.

Following the Audiovisual treatment, the experimental group achieved a mean score of 9.83 (Table 3) on the terminal evaluation instrument. The mean gain was 4.50 points.

Significance of the Findings

The results of this study showed a significance factor of +.067 for the group treated with the Audiovisual Method over the group treated with the Audiolingual Method (Table 4).

The difference between the estimate of probability at the .05 level and the results of the study at .067 are significant. The Audiovisual Method was more efficient than the Audiolingual Method for teaching material based on conceptual differences between the primary and the target languages.

Implications of the Findings

The methodology employed by the SL teacher has an effect on the learning outcome and can contribute to significant differences in the results obtained by the students in the class. Both groups in this study made significantly large gains in knowledge when their attention was focused on a designated linguistic-conceptual item, a sequentialized lesson plan was prepared and presented, and individualized practice was required of each participant.

However, the experimental group showed a small but significant superiority over the control group in their knowledge of the material. This implies that the Cognitive-code Learning Theory, Feature Analysis, Discovery Learning Strategy and the other theoretical hypotheses and research findings previously discussed can be productively employed in the area of Second Language instruction.

Summary

The analysis of the data obtained from the study has supported the claims of the previously mentioned authorities that methods based on the Cognitive-Process Theory are more efficient in certain circumstances than methods based on Behaviorism.

Visual aids, such as those used in this study, constitute just one manner of developing techniques which can be utilized to incorporate recent research findings into the instructional format in ESL and foreign language classrooms.

Developers of materials for SL instruction should become aware of the implications of the research findings related to the Cognitive-code Learning Theory and devise new methodologies which will develop the potentialities of the theory. This would directly benefit both the teachers and the students who are involved in a second language learning situation.

TABLE 2

ANALYSIS OF SCORES

AUDIOLINGUAL METHOD, CONTROL GROUP A

Student	Pretest Score	Posttest Score	Points Gained
Hector	3	10	7
Angel	7	10	3
Susana	6	8	2
Samuel	6	8	2
Sarah	5	9	4
Marta	5	10	5
Totals	32	55	23

MEAN SCORES

Mean Pretest 5.33

Mean Posttest 9.16

Mean Gain 3.83

TABLE 3

ANALYSIS OF SCORES

AUDIOVISUAL METHOD, EXPERIMENTAL GROUP B

Student	Pretest Score	Posttest Score	Points Gained
Maria	5	10	5
Sagrario	5	10	5
Eric	6	10	4
Jose	6	10	4
Eva	3	9	6
Rafael	7	10	3
Totals	32	59	27

MEAN SCORES

Mean Pretest	5.33
Mean Posttest	9.83
Mean Gain	4.50

TABLE 4

COMPARISON OF MEAN SCORES

	Mean Pretest	Mean Posttest	Mean Gain
Group A	5.33	9.16	3.83
Group B	5.33	9.83	4.50

DIFFERENCE FACTOR

Group B	+.67 points or .067 level

Chapter 5

SUMMARY OF THE STUDY

Summary

This study was undertaken to investigate the effects of alternate methodologies on the learning outcome of certain elements of an SL that are founded on a different manner of viewing, organizing and interpreting reality data than in the primary language system. These elements account for the existence of non-correlating lexical items, syntactic patterns and generic categories between the primary language of the students and the target language.

It was hypothesized that SL teaching methods based on habit formation theories are the main cause of students' difficulties in learning these conceptually different items.

Past and present methods of SL instruction were described, and various other theories concerning language analysis and acquisition were researched in an attempt to compose an alternate method of instruction that might be more effective in teaching SL students to recognize conceptual differences and consequently deal more effectively with "confusing" lexical choices. The areas that were researched and combined into an experimental method included the cognitive-code learning theory, generative-transformational grammar, linguistic relativity, contrastive-analysis, feature-

analysis (visual perception only), schemata and concept formation, the uses of visual media in the SL classroom, and discovery-learning techniques.

A study was then designed and implemented in which it was attempted to eliminate or control all variables except that of methodology.

The group selected for this study was an intermediate ESL class at La Puente High School composed of individuals who used Spanish as their primary language; the target language was English.

In Chapter Two, the linguistic/conceptual items to be taught were described, all variable factors were discussed, and the study was described.

Conclusions

The results of the study showed that methodology had a significant effect on the learning outcome--a +.067 level of significance was achieved. The hypothesis that was made was proven valid. The difference was not great, but was sufficient to prove that the cognitive-code learning approach is more effective than the habit-formation approach in this learning situation.

Recommendations

It is recommended that further experimental studies be conducted using the two compared methods with other linguistic/conceptual items.

In the area of teaching ESL to speakers of Spanish,

there are many other lexical items, syntactic patterns and generic categories that could be developed and materials prepared in order to retest the stated hypothesis. Some of the lexical items are:

otro = other/another
(definite/indefinite)

varios = some/a few
(mass noun/count noun)

ninguno = neither/none
(duality/plurality)

hasta = up to/until
(space/time)

solo = alone/lonely
(condition/emotion)

Some of the syntactic patterns are:

Se me cayó la pintura.	= I dropped the paint. The paint fell on me.
Juan me compró la bicicleta.	= John bought me the bike. John bought the bike from me.
¿Qué hacía tu mamá?	= What was your mother doing? What did your mother use to do?

Examples of generic category differences are:

Spanish	English
(null)	pets
	berries
	nuts
	teenagers

The suggestion of this researcher is that a list of all the non-correlating linguistic-conceptual items be prepared for the teaching of a particular language to

speakers of a given primary language. Each item that appears in such a taxonomy will be a potential area of confusion for the SL student. Drawings should then be prepared by the teacher to illustrate each of these items. The drawings should illustrate the relevant visual features that determine the choices in a contrastive set of words or patterns in the target language.

It is recommended that further and more comprehensive studies be conducted to ascertain the efficiency of the described teaching methodologies on the learning outcome in relation to all the non-correlating bilingual-conceptual items. The Audiovisual Method should be tested in a broader range of conditions with students of other language and cultural backgrounds.

Further research should also be carried out in relation to short-term and long-term retention of materials learned by means of the differing methodologies. A longitudinal study might ascertain if visual treatment affects memory in an equal or in a more positive manner than an aural-oral treatment.

It is suggested that additional experimentation be conducted and analyzed for the purpose of developing the most efficient method of instruction to students at various levels of maturation in the educational system.

Other studies to investigate the relationship of methodology to learning styles would be of great value to developers of SL materials and to the classroom teachers

who are involved in discovering the most effective and enjoyable manner of teaching a second language.

APPENDIX

PRELIMINARY EVALUATION

_____
(name)

Circle the word (in, on, at) that you think is the best choice to complete each of the following sentences:

1. Someone left this basketball (in, on, at) our house. I found it on the grass.
2. My father was an actor. He was (in, on, at) many movies.
3. My mother is (in, on, at) the movies. She loves to watch old pictures.
4. I live in La Puente, at 6721, (in, on, at) Main Street.
5. We were all seated (in, on, at) the table, ready to eat, when the phone rang.
6. There isn't any name (in, on, at) this paper.
7. I'm sorry that I stepped (in, on, at) your foot.
8. That little boy stepped right (in, on, at) the mud.
9. My sister is (in, on, at) the parade. She's just listening to the band.
10. My brother is (in, on, at) the parade. He plays the tuba for the school band.

_____
(score)

TERMINAL EVALUATION

_____
(name)

Circle the word (in, on, at) that you believe best completes the sentences that follow:

1. That boy is cold. He has his hands (in, on, at) his pockets.
2. The milkman left the bottles of milk (in, on, at) the door.
3. The birds are tired. They are all sitting (in, on, at) the telephone wires.
4. Jack plays the piano. He is (in, on, at) the concert this Sunday.
5. I want to hear him play. I will be (in, on, at) the concert.
6. Do you live (in, on, at) La Puente?
7. Please don't put your books (in, on, at) the floor.
8. You play baseball for the school. Will you be (in, on, at) the game tomorrow playing against Los Altos?
9. I like to watch baseball very much. I'll be (in, on, at) all the games.
10. Don't you live (in, on, at) Amar Avenue?

_____
(score)

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